Livestock Risk Protection (LRP) Insurance for Fed Cattle

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MF-2706
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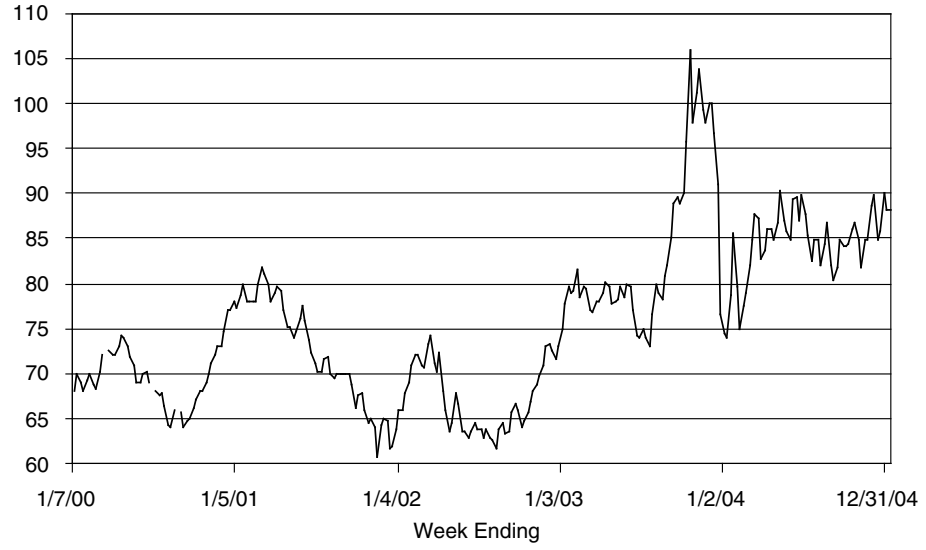
Livestock Risk Protection (LRP) Insurance for Fed Cattle is a new risk management tool offered by USDA's Risk Management Agency (RMA). LRP provides cattle feeders an opportunity to insure against the risk that slaughter cattle prices will decline significantly while cattle are on feed. The length of time cattle are on feed varies depending on animal placement weight. Steers weighing 750 pounds when placed on feed average about 132 days (19 weeks) on feed whereas calves weighing 500 to 600 pounds at placement average about 188 days (27 weeks) on feed.[1] Slaughter cattle prices can change substantially during a typical feeding program.

Figure 1 illustrates historical volatility in slaughter cattle prices. Weekly average slaughter cattle prices in Kansas averaged $75.58 per hundredweight over the 5-year period from 2000 through 2004. However, weekly average slaughter cattle prices varied from a low of $60.80 per hundredweight to a high of $106.01 per hundredweight during the 5-year period. More important to cattle feeders is the amount that prices can be expected to fluctuate over shorter periods, specifically from the time cattle are placed on feed until they are marketed.

Annual average cattle prices from 2000 to 2004 ranged from a low of $69.87 per hundredweight in 2000 to a high of $84.68 per hundredweight in 2004.

Figure 1. Kansas Direct Slaughter Steer Prices, Weekly Average, 2000-2004.

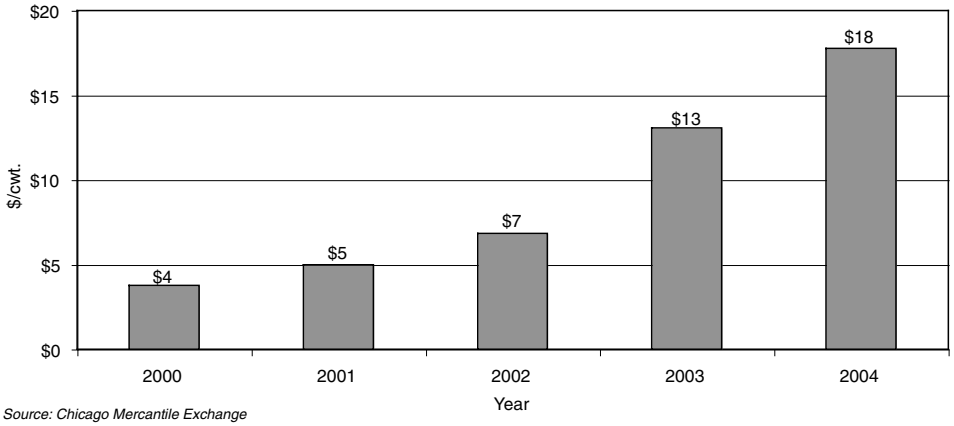


Source: *Agricultural Marketing Service, USDA*

To determine how variable cattle prices were within each year, standard deviations of Kansas slaughter cattle prices were calculated. The standard deviation measures how much variability there is around the average. For example, with a normal distribution (i.e., bell shape), approximately two-thirds of the data fall in a range of the average, plus and minus one standard deviation. Standard deviations of slaughter cattle prices fluctuated from a low of $3.35 per hundredweight in 2000 to a high of $8.97 per hundredweight in 2003. Even the smallest standard deviation of $3.35 per hundredweight indicates that cattle prices are quite volatile and thereby expose cattle feeders to a substantial amount of risk. For example, assuming a fed cattle weight of 1,200 pounds, a standard deviation of $3.35 per hundredweight implies that two-thirds of the prices were in a range of the average ± $40.20 per head ($3.35 × 12). More importantly, a third of the time prices were even outside of this $80 range.

Another way to examine how much risk cattle feeders face is to examine the price risk during a typical feeding program. Kansas cow-calf producers often retain ownership of their fall-weaned calves for a winter backgrounding program. Following completion of the backgrounding phase, yearling cattle are typically placed on feed in March. Yearling cattle placed on feed March 15 would typically be ready for market by about August 1. Figure 2 reports the difference between the highest and lowest prices for August live cattle futures prices from March 15 through August 1 for each year since 2000. The average difference from 2000 to 2004 was $9.29 per hundredweight The variability in slaughter cattle prices and expected slaughter cattle prices as represented by live cattle futures prices suggests that most cattle feeders need to manage the price risk associ-

Figure 2. Difference Between Maximum and Minimum August CME Live Cattle Futures Prices: March 15 to August 1, 2000-2004.



Source: Chicago Mercantile Exchange

ated with placing cattle on feed. *LRP Insurance for Fed Cattle* is a new risk management tool that offers cattle feeders another way to manage slaughter cattle price risk in their cattle operations.

What is LRP?

Livestock Risk Protection (LRP) is a federal insurance program administered by the Risk Management Agency (RMA) designed to protect livestock producers from price declines. *LRP for Fed Cattle* offers cattle feeders the opportunity to purchase insurance against the possibility that fed cattle prices, as measured by the USDA *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price*, will decline during the LRP coverage period. Currently, LRP is a pilot program sold by insurance companies through RMA, a branch of the US Department of Agriculture (USDA), and approved by the Federal Crop Insurance Corporation (FCIC) Board. LRP for fed cattle is available to producers of fed cattle located in Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Nevada, North Dakota, Oklahoma, Ohio, South Dakota, Texas, Utah, West Virginia, Wisconsin, and Wyoming.

Are there any limitations regarding how many head can be insured via LRP?

Since LRP is still a pilot program, there is a limitation regarding how many head can be insured on an annual basis. A crop year, for LRP insurance purposes, is considered to run from July 1 to June 30 of the following year. Up to 4,000 head may be covered per producer per year (July 1 to June 30). Additionally, there is a limitation regarding how many head may be insured at any one time. Producers are currently limited to insuring a maximum of 2,000 head per Specific Coverage Endorsement (SCE), where SCE simply refers to the actual insurance policy on a group (or individual animal) of cattle insured.

Where do producers purchase LRP insurance?

LRP can be purchased from approved livestock insurance agents. Prior to filing a Specific Coverage Endorsement (SCE) for a particular group of cattle, producers must fill out an application for approval and receive an approved policy. On the day the insurance is to begin, producers must complete an SCE that provides the underwriting and guarantee details for a specific group of cattle. No insurance is in effect until an SCE is submitted and the premium is paid. A Substantial Beneficial Interest (SBI) form must also be filled out identifying all parties with 10 percent or more ownership interest in the cattle covered under the policy. Each SCE must have an SBI form associated with it. Unlike crop insurance, the LRP insurance premium must be paid when the SCE is submitted and coverage attaches.

How far ahead of the intended cattle marketing date may producers purchase LRP insurance?

The length of insurance, called the endorsement length in the RMA Premium Calculator, can be 13, 17, 21, 26, 30, 34, 39, 43, 47, or 52 weeks prior to the intended marketing date. However, on any given day, the maximum available endorsement length quoted on the RMA Premium Calculator Web site[2] is often less than the 52 week maximum. Producers must choose from the endorsement lengths posted on the RMA Premium Calculator on the day they purchase coverage.

What kinds of cattle are eligible for coverage?

Any steers or heifers that will weigh between 1,000 and 1,400 pounds near the end of the insurance period are eligible for coverage.

How are the LRP insured prices determined?

The LRP coverage prices at which cattle are insured are a percentage (between 70 percent and 95 percent) of the expected end value of the cattle at the end of the coverage period. The online LRP Premium

Calculator allows producers to examine available *LRP* coverage prices. The coverage prices and the expected end value change daily. Producers must check the RMA Premium Calculator Web site daily to determine the coverage levels and coverage prices that are available to be purchased on an SCE.

How is the expected end value determined?

The expected end value is a daily forecast of the *USDA Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* for steers grading 35 percent to 65 percent choice. Forecasts are based on each day's CME live cattle futures and options settlement prices. Thus, the expected end value changes daily.

The *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* for steers grading 35 percent to 65 percent choice is reported weekly in the *Five-Area Weekly Weighted Average Direct Slaughter Cattle Report* published by the Agricultural Marketing Service (AMS). The five area report covers the following regions: Texas/Oklahoma, Kansas, Nebraska, Colorado, and Iowa/Minnesota. The code for this report is LM_CT150 and it is reported via the AMS Web site.[3]

Premium calculations:

Number of head	100
Expected End Target Weight	× 12 cwt
	1,200 cwt
Coverage Price	× $83
Insured Value	$99,600
Premium Rate	× 0.025169
Total Premium	$2,507
USDA Subsidy Percentage	× 13%
Premium Subsidy	$326

$2,507 (Total Premium) - $326 (Premium Subsidy) = $2,181 Producer Premium

$2,181 (Total producer premium) ÷ 1,200 (total cwt.) = $1.82 Producer premium per cwt.

How is the total insured value determined?

The expected end value is expressed as dollars per hundredweight. For example, if a producer is insuring 100 head of fed cattle he expects will weigh 1,200 pounds at the end of the coverage period, then the expected end value would be based on 120,000 pounds or 1,200 hundredweight. The total value insured is the coverage price times the number of hundredweight insured. In the example above, given a coverage price of $83 from the available price guarantees on the RMA Premium Calculator Web site, the total value of insurance would be $83 multiplied by 1,200 hundredweight or $99,600. LRP expected end values, coverage prices, Rates and cost of insurance per hundredweight are all available on the RMA Premium Calculator Web site.

Do producers have the opportunity to select the level of coverage?

Yes, producers select the level of coverage by choosing the percentage of that day's expected end value they want to insure. Coverage prices range from 70 percent to 95 percent of the expected end value. However, on any given day, producers must choose from available coverage levels posted on the RMA's Premium Calculator Web site. For example, for a policy starting on February 7, 2005 with a 21-week endorsement length, the highest available coverage price was $77.12 per hundredweight with a corresponding coverage level of 94 percent. For the same starting date and endorsement length, the lowest available coverage price was $65.12 per hundredweight with a corresponding coverage level of 79 percent. There were also five other coverage prices and corresponding coverage levels to choose from on that particular day.[1]

How is the LRP insurance premium calculated?

The total LRP insurance premium is calculated by multiplying the total insured value by the premium rate. After the total premium has been calculated, USDA subtracts a 13 percent subsidy from the total premium to calculate the portion of the premium for which the producer is responsible (i.e., the portion of the total premium the producer pays). Daily premium rates may be found on the RMA Premium Calculator Web site. Premium rates fluctuate daily based on changes in coverage prices, coverage levels, and market volatility. The higher the coverage level and the longer the endorsement length, the higher the rate will be. It is important to check on the RMA Premium Calculator Web site to find the premium rates for the day

the LRP insurance will be purchased. The example on this page illustrates how premiums are calculated.

Assume a producer owns 100 head of fed steers that she expects will weigh 1,200 pounds per head (12 hundredweight per head or a total of 1,200 hundredweight) near the end of the coverage period. She chooses a coverage price of $83 per hundredweight. Further assume that the premium rate for that coverage price on that date was 2.5169 percent. Following the calculations below, the resulting producer paid premium in this example is $2,181 ($1.82 per hundredweight).

How does RMA determine indemnity payments on LRP contracts?

Indemnity payment calculation:

Number of head		100
Expected ending target weight	×	12 cwt
		1,200 cwt
Difference between Actual End Value and Coverage Price	×	$3
Indemnity Payment		$3,600

Purchasers of LRP fed cattle insurance are insuring against a decline in the *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* reported by USDA for steers grading 35 percent to 65 percent choice. Indemnity payments are made to cover the difference between the coverage price and the actual end value, which is the *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* for steers grading 35 percent to 65 percent choice reported by USDA's Agricultural Marketing Service (AMS) for the ending week chosen when the LRP policy was purchased. This report can be found at the AMS Web site.[2]

For example, if a producer has insured 100 head of cattle that she expects will weigh 1,200 pounds at the end of the coverage period she has insured 120,000 pounds or 1,200 hundredweight. Assume the AMS reported *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* during the ending week is $80 per hundredweight. The difference between the coverage price ($83 per hundredweight) and the actual end value ($80 per hundredweight) is $3 per hundredweight ($83-$80). The indemnity payment is calculated by multiplying 1,200 hundredweight by the difference between the coverage price and the actual end value, in this case $3 per hundredweight. So, the indemnity payment will be $3,600. To receive an indemnity payment, a claim form must be submitted within 60 days of the policy's ending date.

Does LRP guarantee the actual cash sale price for the cattle?

No, the actual cash price producers receive for their fed cattle has no effect on any indemnity they receive (or fail to receive) from their LRP policy. The actual end value is specified on the RMA Premium Calculator Web site and is the USDA AMS-reported *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price*. Therefore, the actual price producers receive for their fed cattle (and any premiums or discounts they might receive relative to the Five-Area weighted average) are not used to calculate their LRP policy's indemnity payment. For example, consider a producer who sells 1,200 hundredweight of LRP insured cattle on the cash market for $84 per hundredweight and the actual end value reported by AMS at the end of the endorsement period is $80 per hundredweight. To calculate the indemnity payment due (if any) to the producer under the LRP policy, the actual end value of $80 will be used, not the $84 per hundredweight that the producer received for the cattle. Likewise, if the cattle were sold in the cast market for $77 per hundredweight, the $80 actual end value would still be used to determine if an indemnity payment is due. The key point to recognize is that when producers purchase LRP they still have basis risk where basis is defined as the difference between the Five-Area Weighted Average Direct Slaughter Cattle Price and their local cash market. Thus, LRP insures against price risk, but not against basis risk (this is similar to using CME live cattle futures or put options for price risk management).

When is LRP insurance available for purchase?

LRP rates are set at about 5 p.m. each day based upon that day's CME live cattle futures and options settlement price. The LRP rates remain available until the markets open the next morning at 9 a.m. LRP coverage is not available for purchase from Saturday morning at 9 a.m. until Monday evening at 5 p.m. or on Federal holidays. Remember, to initiate LRP insurance coverage on a given day, producers must have an approved policy and then they must make contact with

their insurance agent, complete an SCE, and submit payment for the insurance coverage.

Example

A producer owns a 100 percent interest in 100 head of fed steers that she expects will weigh 1,200 pounds (12 hundredweight) per head near the end of the endorsement period. An endorsement length of 30 weeks is chosen from the available options on the RMA Premium Calculator Web site. The expected End Value is $79 per hundredweight. A coverage price of $72 per hundredweight is chosen which corresponds to a coverage level of 91 percent. At this coverage price the premium rate is 2.6025 percent per hundredweight. There is a premium subsidy of 13 percent per hundredweight

Assume that at the end of the policy's endorsement period, the cattle are sold on the cash market for $76 per hundredweight. The actual end value reported by RMA at the end of the endorsement period is $70 per hundredweight, which is less than the $72 per hundredweight coverage price. Therefore, an indemnity payment is due.

Notice the actual cash price of $76 received by the producer has no effect on the indemnity payment calculations. The actual end value, which is the *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* at the end of the endorsement period, is used to calculate the indemnity payment.

Example

Premium calculations:

Number of Head	100
Expected Ending Target Weight	× 12 cwt
	1,200 cwt
Coverage Price	× $72
	$86,400
Premium Rate	× 0.026025
Total Premium	$2,249
Premium Subsidy	× 0.13
	$292

$2,249 (Total Premium) - $292 (Premium Subsidy) = $1,957 Producer Premium

$1,957 (Total Producer Premium) ÷ 1,200 (total cwt.) = $1.63 Producer Premium per cwt.

Indemnity payment calculation:

Number of Head	100
Expected Ending Target Weight	x 12 cwt
	1,200 cwt
Difference of Actual End Value and Coverage Price	x $2
Indemnity Payment	$2,400

LRP Insurance Summary

Purchasing LRP insurance for fed cattle provides price protection in the event that the *Five-Area Weekly Weighted Average Direct Slaughter Cattle Price* declines below the coverage price listed in the buyer's SCE. Thus, buyers can protect themselves from significant price declines during the feeding period. LRP insurance is particularly attractive for smaller producers since coverage is purchased per head and is not restricted to fixed contract sizes, as is the case with Chicago Mercantile Exchange (CME) options on live cattle futures. Similarly, even larger producers that desire to incrementally price cattle might find LRP attractive because coverage is purchased per head, instead of in fixed contract increments.

There are limitations to LRP insurance for fed cattle. Specifically, compared to CME options on live cattle futures, LRP buyers give up some flexibility. Once LRP insurance for fed cattle is purchased, producers cannot offset the contract prior to the end of the endorsement period. Additionally, users of LRP are potentially exposed to additional basis risk because contracts are only offered in endorsement lengths that vary by 4- or 5-week increments. This means that, in some cases, producers might sell cattle several weeks before or after the policy's end date, exposing them to additional basis risk over that period. In contrast, purchasers of CME options can typically offset their option position on the same day as cash market sales are made, potentially reducing their exposure to basis risk.

Footnotes

[1] Mark, D., R. Jones, and J. Mintert. *Seasonal Trends in Steer Feeding Profits, Prices, and Performance.* Kansas State University, May 2002.

[2] RMA Premium Calculator can be found at *http://www3.rma.usda.gov/apps/premcalc/*

[3] http://www.ams.usda.gov/mnreports/LM_CT150.txt

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The authors gratefully acknowledge funding support from the U.S. Department of Agriculture's Risk Management Agency.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-2706 December 2005